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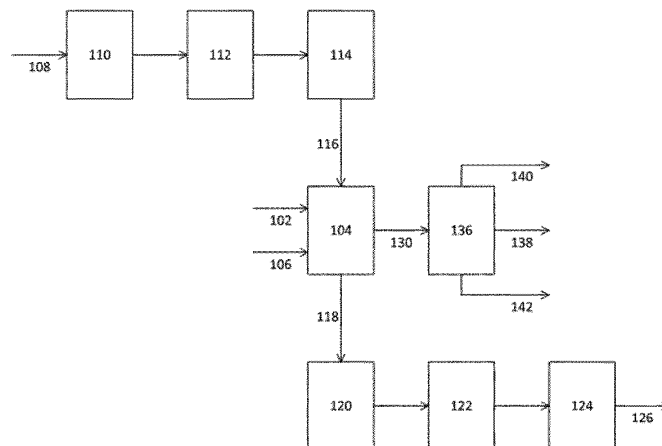
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(54) Title: STANDALONE HYDRO-DEMETALLIZATION (HDM) UNIT

Figure 1



(57) Abstract: The present invention provides a process for hydro-demetalizing of residual hydro-carbonaceous feedstock, the process comprising: passing the feedstock to a vertically-disposed reaction zone comprising at least one moving bed reactor, wherein the at least one moving bed reactor comprises at least one catalyst bed of hydro-demetalization catalyst and is configured for catalyst addition and removal; subjecting the hydrodemetalization catalyst to in-line fresh catalyst deairing, pressurizing, and hydrocarbon soaking via a catalyst sluicing system before entering the moving bed reactor; further subjecting the hydrodemetalization catalyst to sulphidic activation before entering the moving bed reactor at a top portion of the moving bed reactor, wherein the hydrodemetalization catalyst is added to the moving bed reactor through gravity; removing any spent hydrodemetalization catalyst from a bottom portion of the moving bed reactor during processing of the feedstock; and subjecting the removed spent hydrodemetalization catalyst to in-line spent

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catalyst hydrocarbon removal, depressurizing, inerting, and airing; and wherein reactor internals located within the reaction zone provide balance and controlled catalyst movement during catalyst addition and removal from the moving bed reactor.